

REMARKS

The specification has been amended to correct the use of cultivar names, as requested by the Office. All denotations to the new and distinct variety of sweetpotato have been replaced throughout the substitute specification with the cultivar name of 'L96-117'. References to the sweetpotato varieties, L91-189, Beauregard, L78-21, and Jewel, have also been replaced throughout the substitute specification with 'L91-189', 'Beauregard', 'L78-21', and 'Jewel', respectively.

On page 1, the title has been amended to clarify that the name of the new variety is 'L96-117'.

On page 1, paragraph 1 has been amended to clarify that the invention pertains to a new and distinct variety of sweetpotato. This paragraph has also been amended by deleting "having superior disease processing qualities and a high total-sugar content," as suggested by the Office.

On page 1, paragraph 2 has been amended by clarifying that this "new and distinct sweetpotato variety, ... demonstrates both superior processing qualities and high total-sugar content as compared to other available sweetpotato varieties known to the inventors," as suggested by the Office.

On page 1, between paragraphs 1 and 2, the headings, "GENUS AND SPECIES NAME" and "VARIETY DENOMINATION," have been added as suggested by the Office.

On page 1, between paragraphs 2 and 3, a paragraph has been added, as suggested by the Office, to clarify that the instant plant has been identified as 'L96-117'.

On page 2, paragraph 7 has been amended to clarify that "[c]opies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee." This paragraph has also been moved to the beginning of the "Brief Description of the Drawings" section, in accordance with 37 CFR 1.84 (a)(2) (effective July 30, 2003).

On page 2, paragraph 8 has been amended, as suggested by the Office, to clarify that the cultivars, 'L91-189' and 'Beauregard', are unpatented. The paragraph has also been amended to clarify that "no patented male parents were among potential pollen sources in the crossing nursery."

On page 2, paragraph 8 has also been amended, as suggested by the Office, to clarify that 'L96-117' "resulted from an open pollinated cross to the Louisiana Agricultural Experiment Station

female parent 'L91-189' (unpatented) ... [and an unknown] male parent." The paragraph has also been amended to provide additional information regarding the origin of the instant plant.

On page 2, paragraph 9 has been amended, as suggested by the Office, to provide information relative to the age of 'L96-117' and its planting size.

On page 2, paragraphs 10 and 11 have been amended, as suggested by the Office, to provide additional information relative to the storage roots of 'L96-117', including the typical and observed shape, length, diameter, apex and base descriptors, and weight. In addition, the table located between paragraphs 12 and 13 has been amended to provide cortex coloration, with reference to the employed color chart. Please note that on page 2, paragraph 11 is now located after Table 1 which was originally on page 3, between paragraphs 12 and 13.

On page 2-3, paragraph 11 has also been amended, as suggested by the Office, to provide comparative information between 'L96-117' and 'Beauregard'. Additionally, paragraph 11 has been amended, as suggested by the Office, to clarify that the cultivar, 'Jewel', is unpatented. The paragraph has also been amended, as suggested by the Office, to provide both the typical and the observed plant height and diameter/spread of 'L96-117', additional information relative to the foliage of 'L96-117', and information relative to the lateral branches and stems of 'L96-117'.

On page 3, an additional paragraph has been inserted between paragraphs 11 and 12 to provide information regarding the inflorescence of 'L96-117', including the type of inflorescence and the number of flowers per inflorescence. Additionally, the paragraph provides information regarding the flowers of 'L96-117'; including the corolla diameter and depth, and fragrance, petal number, shape, length, width, apex, base, and margin descriptor, and coloration with reference to the employed color chart. Additionally, the paragraph provides information relative to the sepals of 'L96-117', including the number of sepals, shape, length, width, apex and margin descriptor, and coloration with reference to the employed color chart. Additionally, the paragraph provides information relative to the peduncle of 'L96-117', including the peduncle length, diameter, and coloration with reference to the employed color chart. Furthermore, the paragraph provides information relative to the flower buds of 'L96-117', including the typical and observed bud shape, length, diameter, and coloration, with reference to the employed color chart.

On pages 2-3, paragraph 11 has also been amended, as suggested by the Office, to provide color designations for the "purple-edged", "purple", and "green" colorations, and typical and observed color designation(s) of the immature leaves' upper and lower surfaces, with reference to the employed color chart.

On pages 2-3, paragraph 11 has also been amended, as suggested by the Office, to provide color designations for the "light purple" and "green" colorations along with the typical and observed color designation(s) of the entire petiole, with reference to the employed color chart.

On pages 2-3, paragraph 11 has also been amended, as suggested by the Office, to provide additional information relative to the petiole of "L96-117", including the typical and observed petiole length and diameter.

On pages 2-3, paragraph 11 has also been amended, as suggested by the Office, to provide a color designation for the "purple" joint and "green" node colorations, with reference to the employed color chart.

On page 3, paragraph 12 has been amended, as suggested by the Office, to delete reference to the trademark symbol "R" and to the embedded hyperlink.

On page 3, the table appearing between paragraphs 12 and 13 has been amended, as suggested by the Office, to clarify the color designations set forth in the table, with reference to the employed color chart.

On page 5, paragraph 17 has been amended, as suggested by the Office, to provide the typical and observed time for producing a harvest.

Each of these amendments is intended as clarification, and should not be considered new matter.

In accordance with 37 C.F.R. § 1.125 as amended, a marked-up version of the substitute specification is presented in Appendix A; and a clean version of the substitute specification is presented in Appendix B.

Enclosed is a check for \$475 for a three-month extension of time, paid as a small entity, to extend the time for response from July 8, 2003 to October 8, 2003. (37 C.F.R. § 1.136(a)(3)) If this amount is incorrect, please refer to the Deposit Account Authorization previously filed for this application.

Reexamination and reconsideration of the application in light of the above amendments and the following remarks are respectfully requested.

The Drawing Objection

The Office objected to the drawings under 37 CFR 1.165(a) for failure to submit unmounted photographic illustrations.

In response to this objection, applicants are submitting new photographs on 8.5 x 11 in paper in place of the original drawings to comply with the Office's request.

The Objection to the Paragraph Regarding the Presence of at Least One Drawing in Color

The Office objected to the disclosure suggesting that paragraph 7 (page 2, lines 4-6) be deleted as "these recitations are usually set forth in a U.S. Plant Patent application transmittal form." pg. 7, Office Action. Applicants respectfully submit, however, that according to 37 CFR 1.84 (a)(2) (effective July 30, 2003) this recitation is required. Therefore, it is respectfully submitted that this objection should be withdrawn.

Objection to the Disclosure Under 37 CFR 1.163 and 35 USC § 112

The Office objected to the disclosure under 37 CFR 1.163 (a) and 35 USC § 112, first paragraph, stating that "the specification presents less than a full, clear and complete botanical description of the plant and the characteristics which define same per se and which distinguish the plant from related known cultivars and antecedents." (pg. 3-4, Office Action)

In response to these objections, Applicants are submitting a substitute specification which provides a more full, clear, and complete botanical description of 'L96-117'. No new matter is being added. If the Office disagrees, kindly refer to MPEP § 1605 which states:

If the written description of a plant is deficient in certain respects [Citation Omitted], a clarification or additional description of the plant, or even a wholesale substitution of the original description so long as not totally inconsistent and unrelated to the original description and photograph of the plant may be submitted in reply to an Office action. Such submission will not constitute new matter [Citation Omitted]

The § 112 Rejections

Claim 1 was rejected under 35 U.S.C. 112, first and second paragraphs, "as not being supported by a clear and complete botanical description of the plant" (pg. 12, Office Action)

Applicants are submitting a substitute specification. The botanical description of 'L96-117' has been amended to provide a more full, clear, and complete botanical description of 'L96-117'. In addition, Claim 1 has been amended, as suggested by the Office, to clarify that the claimed invention is "[a] new and distinct variety of *Ipomoea batatas* plant named 'L96-117'." Therefore, in light of the amendments to the specification and claim, it is respectfully submitted that these rejections should be withdrawn.

Objection to the Declaration

The Office objected to the Declaration under 37 CFR 1.67 (a), stating that the oath was defective because "[n]on-initialed and/or non-dated alterations have been made" In response to this objection, Applicants are submitting a substitute Declaration. Therefore, it is respectfully submitted that this objection should be withdrawn.

Conclusion

For the reasons discussed, it is respectfully submitted that the specification and pending Claim are in condition for allowance. If the Office disagrees with any of these remarks, or if other issues arise that may present an obstacle to allowance, the undersigned would welcome a telephone call to discuss such matters before further action is taken. Otherwise, allowance of Claim 1 at an early date is solicited.

Respectfully submitted,



André J. Porter
Registration No. 50,341
Taylor, Porter, Brooks & Phillips, L.L.P.
P.O. Box 2471
Baton Rouge, Louisiana 70821
(225) 381-0262

October 8, 2003



Appendix A -- Substitute Specification (Marked Up Version)

[L96-117] SWEETPOTATO PLANT NAMED 'L96-117'

Don R. LaBonte, Christopher A. Clark, James M. Cannon,
Paul W. Wilson, and Arthur Q. Villordon

RECEIVED
OCT 22 2003
TECH CENTER 1600/230

Express Mail No. EF199471028

File No. 01A10

[0001] This invention pertains to a new and distinct variety of sweet potato [having superior processing qualities and a high total-sugar content].

BACKGROUND OF THE INVENTION

[0002] Sweetpotatoes, unlike Irish potatoes (*Solanum tuberosum*), are not tuber propagated plants. A "tuber" is a short, thickened portion of an underground branch. Along a tuber are found "eyes," each of which comprises a ridge bearing a scale-like leaf (analogous to a branch leaf) having minute meristematic buds in the axial of the leaf. By contrast, sweet potato roots are developmentally and anatomically true roots, lacking meristematic buds, and are not derived from an underground branch. Sweet potatoes do not form tubers.

SUMMARY OF THE INVENTION

GENUS AND SPECIES NAME

[0003] This new and distinct sweetpotato variety [is identified as "L96-117 Sweetpotato" ("L96-117"). L96-117 is a sweetpotato variety], *Ipomoea batatas* (L.) Lam., [developed from a seedling produced in a polycross nursery. L96-117] demonstrates both superior processing qualities and high total-sugar content as compared to other available sweetpotato varieties known to the inventors. [L96-117 is characterized by an intense orange flesh and an elongated root.]

VARIETY DENOMINATION

[0004] This new and distinct sweetpotato variety is identified as 'L96-117', and is characterized by its dark orange flesh and its elongated roots.

[0005] [Sweetpotatoes, unlike Irish potatoes (*Solanum tuberosum*), are not tuber propagated plants. A "tuber" is a short, thickened portion of an underground branch. Along a tuber are

found "eyes," each of which comprises a ridge bearing a scale-like leaf (analogous to a branch leaf) having minute meristematic buds in the axial of the leaf. By contrast, sweet potato roots are developmentally and anatomically true roots, lacking meristematic buds, and are not derived from an underground branch. Sweet potatoes do not form tubers.]

BRIEF DESCRIPTION OF THE DRAWING

[0006] The file of this patent contains at least one photograph executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

[0007] [Figure] Fig. 1 is a color photograph of the [fleshy root] growth form of the novel variety of sweet potato identified as 'L96-117' ["L96-117sweetpotato"].

[0008] [Figure] Fig. 2 is a color photograph of the [fleshy root] growth form of the sweet potato variety identified as 'Beauregard' ["Beauregard sweetpotato"].

[0009] [Figure] Fig. 3 is a color photograph of the canopy biomass of the novel variety of sweetpotato identified as 'L96-117' ["L96-117sweetpotato"].

[0010] [The file of this patent contains at least one photograph executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.]

DETAILED BOTANICAL DESCRIPTION

[0011] This new variety of sweetpotato, identified as 'L96-117', resulted from an open pollinated cross to the Louisiana Agricultural Experiment Station (Baton Rouge, Louisiana) female parent 'L91-189' (unpatented) which was performed in 1995. The male parent is unknown. No patented male parents were among potential pollen sources in the crossing nursery. 'L96-117' was developed by the Louisiana Agricultural Experiment Station in Baton Rouge, Louisiana, to provide a variety with characteristics similar to 'Beauregard' (unpatented), but with improved processing qualities. The female parent 'L91-189' (unpatented) had similar disease resistance. 'L91-189' was discarded as a parent and no longer exists because of poor root shape; hence no comparison is given.

[0012] [L96-117 was developed by the Louisiana Agricultural Experiment Station in Baton Rouge, Louisiana, to provide a cultivar with characteristics similar to the Beauregard sweetpotato, but with improved processing qualities. L96-117 originated as a seedling from a polycross nursery of the previous year. The female lineage of L96-117 is L91-189 and Beauregard. (The female parent of Beauregard is L78-21.) The male parent of L96-117 is

unknown. All parents were derived from the sweetpotato breeding program at the Louisiana Agricultural Experiment Station.]

[0013] Color terminology used herein is in accordance with the MUNSELL® color charts for plant tissue and the MUNSELL® Book of Color for root skin and flesh determination (Munsell Color, GretagMacbeth LLC, New Windsor, New York). The color descriptions and color illustrations are as nearly true as is reasonably possible. However, it is understood that both color and other phenotypic expressions described herein may vary from plant to plant with differences in growth, environment and cultural conditions, without any change in the genotype of the variety 'L96-117'.

[0014] 'L96-117' roots were stored during the winter at the Louisiana Agricultural Experiment Station (Sweetpotato Research Station) in Chase, Louisiana. During the following spring, 'L96-117' was planted and produced approximately 8-10 sprouts, which were cut and transplanted successfully for asexual reproduction. Asexual propagation of the new cultivar by cuttings at the Louisiana Agricultural Experiment Station has shown that the unique features of this new sweetpotato are stable and the plant reproduces true to type in successive generations of asexual propagation. Plants described herein are approximately 90-110 days in age from planting in full sun field plantings.

[0015] [Figure] Fig. 1 depicts the fleshy root form of the 'L96-117' sweetpotato. Skin varies in color from light to dark rose, and is typically darker than 'Beauregard' at harvest (skin color lightens in storage). See 'Beauregard' as depicted in Fig. 2. Skin is smooth, similar to that of 'Beauregard'; however, the flesh is more uniformly orange than 'Beauregard', as depicted in Fig. 2. The cortex is 3-4 mm in depth. Colorimetric evaluations using the aforementioned color charts of skin and flesh for both 'L96-117' and 'Beauregard' storage roots at harvest, are shown in Table. 1.

[0016] [Figure 3 depicts the canopy biomass of the L96-117 sweetpotato. L96-117 sweetpotato has purple-stemmed vines with green mottling that begin fading to green about 38 cm from the apex. The appearance of the canopy biomass falls between varieties Jewel and Beauregard, and covers the surface of the soil. Unfolded immature leaves are purple-edged with purple abaxial veins. The abaxial veins remain mostly purple as they mature, while the adaxial veins are mostly green with some purple. Mature leaves have an acute apex and a cordate base.

The leaves vary between 1-3, slight to deep lobes. The petiole is light purple on young, maturing leaves within 20 cm of the vine apex, and gradually changes to green. A purple joint is located at the intersection of the petiole and the leaf. The node from which the petiole attaches to the stem is also green. Storage roots are elongated without any lobing.]

[0017] [Colorimetric evaluations using the Average Hunter Chromacity values (hue (L), value (a), and chroma (b)) of skin, cortex and flesh for both L96-117 and Beauregard storage roots, at harvest, are shown in Table 1. Munsell® color equivalents for hue (L), value (a), and chroma (b) have also been provided in Table 1, using conversion software provided by Munsell at <<http://munsell.com>>.]

Table 1.

	<u>[Variable/Cultivar]</u> <u>Variety</u>	<u>[L</u> <u>(lightness/darkness)]</u>	<u>[a</u> <u>(red/green)]</u>	<u>[b</u> <u>(blue/yellow)]</u>	<u>Color^z</u>
Skin	'L96-117'	[57.2 \pm 10.1 (1.41 YR) ^z]	[21.7 \pm 3.2 (5.55)]	[25.3 \pm 3.0 (6.28)]	<u>5 R (red) (4/6)</u>
	'Beauregard'	[52.3 \pm 2.1 (3.18 YR)]	[19.4 \pm 1.1 (5.07)]	[27.8 \pm 4.7 (6.05)]	<u>7.5 R (red)</u> <u>(5/6)</u>
Cortex	'L96-117'	[68.2 \pm 2.2 (1.88)]	[37.5 \pm 2.9 (6.65)]	[52.4 \pm 7.1 (11.80)]	<u>2.5 Y (yellow)</u> <u>R (red) (7/12)</u>
	'Beauregard'	[69.8 \pm 1.7 (1.10 YR)]	[34.6 \pm 3.2 (6.82)]	[42.5 \pm 6.3 (10.38)]	<u>5 Y (yellow) R</u> <u>(red) (8/6)</u>
Flesh	'L96-117'	[66.1 \pm 0.6 (1.29 YR)]	[34.7 \pm .68 (6.44)]	[43.6 \pm .72 (10.43)]	<u>2.5 Y (yellow)</u> <u>R (red) (7/12)</u>
	'Beauregard'	[68.4 \pm 2.5 (1.74 YR)]	[30.1 \pm 2.1 (6.67)]	[39.1 \pm 2.8 (9.28)]	<u>2.5 Y (yellow)</u> <u>R (red) (7/10)</u>

^z [Data in parentheses represent Munsell® color equivalents for hue (L), value (a); and chroma (b).] Data represent color scale value using the MUNSELL® Book of Color, color-order system.

[0018] Fig.3 depicts the canopy biomass of the 'L96-117' sweetpotato. 'L96-117' has green-stemmed vines [5 G (green) Y (yellow) (4/6)] from the apex to about 25 cm from the apex. The vines gradually change to a green with a purple cast [2.5 Y (yellow) R (red) (4/6)] at the crown of the roots. The appearance of the canopy biomass is greater than 'Beauregard' and less than another variety known as 'Jewel' (unpatented; not shown). See Fig. 2. The canopy architecture is

prostrate (28-30 cm in height from the soil surface) and spreads to a radius of 45 cm, similar to 'Beauregard'. Between 3 to 4 main vines arise from the main stem near the soil surface. The main stem has a 1.5-2.0 cm diameter. The main vines have a length of 72-140 cm, a diameter of 0.4 cm at a distance of 65 cm from the base, a diameter of 1.0 cm at the base, and a diameter of 0.3 cm at the first internode of the first fully developed leaf from the apex. Between 2 to 5 lateral branches arise from each of the main vines. The length of the first internode beginning at the apex between the first and the second fully developed leaf is 7 cm. The internode length for other sections of the vine average between 6 to 7 cm. The upper and the lower surfaces of the unfolded immature leaves are dark green [5 G (green) Y (yellow) (4/6)]. The upper surface color gradually changes (over one to two nodes from the apex) to a darker green [5 G (green) Y (yellow) (3/4)], while the lower surface remains unchanged. The leaf margins from the edge to about 1-1.5 mm are purple [5 R (red) P (purple) (3/6)]. Mature leaves which are located five to six nodes away from the apex have an acute apex, a cordate base, and a smooth leaf margin. Each leaf has two moderate lobes in addition to the main lobe. Mature leaves have a length of 5.0 cm and a width of 7.0 cm. The abaxial veins are indistinguishable from the leaf in color [5 G (green) Y (yellow) (3/4)]. The adaxial veins are dark purple [5R (red) P (purple) (3/8)]. The petiole changes from purple [5 R (red) P (purple) (3/4)] near the leaf junction to green [7.5 G (green) Y (yellow) (4/4)] near the node. The petiole has a length of approximately 5 to 6 cm at a distance of five nodes from the apex, and has a diameter of 2-3 mm at a distance of 4 cm from the leaf junction. The dormant nodal meristem is also purple [5 R (red) P (purple) (4/6)].

[0019] A typical inflorescence of 'L96-117' has 7-8 flowers per peduncle. The peduncle is green [7.5 G (green) Y (yellow) (5/6)], and has a length of approximately 6 to 7 cm and a diameter of 2 mm. The flower bud (one day before opening) has a length of approximately 3 to 3.5 cm from the base of the calyx (calyx is 0.5 cm wide) to the tip of the closed corolla, and a maximum width of 0.5 cm. Bud shape is fusiform. The closed corolla is a purple [5 R (red) P (purple) (5/6)]. Sepal color and size are similar to an opened flower (described in more detail below). The individual opened flowers have a length of 4 to 5 cm from the base of the calyx. The five fused flower petals have a pentagonal pattern with a smooth edge and the corolla is 4 cm wide. The inner throat of the corolla is purple [5 R (red) P (purple) (5/8)], but changes to a lighter purple [5 R (red) P (purple) (8/4)] at the outer surface. The inner and outer limb of the corolla (corolla's outermost area, distal from the calyx) is a light purple [5 R (red) P (purple)]

(8/4)]. The five sepals, which form the calyx, are green [7.5 G (green) Y (yellow) (5/6)] (inner and outer surface), and have an elliptic shape with a cordate apex. The length and width of the sepal are 7 mm and 4 mm, respectively. The sepal margins are smooth. The stigma is white [Munsell Grays R (red) Y (yellow) (9/10)] and has a length of 1.5 cm. Five stamens are attached to the ovary and are inferior to the stigma. No fragrance is present.

Example 1

Tests Conducted

[0020] To confirm that 'L96-117' was a new variety, controlled tests (e.g., pathogen responses and yield) were conducted at the Louisiana Agricultural Experiment Station in Baton Rouge, Louisiana. [As an ancestor of L96-117,] 'Beauregard' was selected for comparison tests with 'L96-117' because of its commercial dominance in the U.S. sweetpotato acreage. 'Beauregard' occupies more than 70% of acreage devoted to sweetpotato in the U.S. Diseases that commonly affect the growth of sweetpotatoes were selected to test for pathogen responses in both varieties. Scions of 'L96-117' and 'Beauregard' reacted similarly to most diseases evaluated in the controlled tests. 'L96-117' was less resistant to [Fusarium] fusarium wilt, caused by *Fusarium oxysporum* Schlect. f. sp. *batatas* (Wollenw.) Snyd. & Hans., than was 'Beauregard'. However, 'L96-117' exhibited higher resistance to soil rot, caused by *Streptomyces ipomoeae* (Person and Martin) Waksman & Henrici., than did 'Beauregard'.

[0021] Nematode reproduction was measured in greenhouse tests. 'L96-117' exhibited higher resistance to the southern root-knot nematode, *Meloidogyne incognita* (Kofoid and White, 1919) Chitwood, 1949, race - 3, than 'Beauregard'. Both 'L96-117' and 'Beauregard' were susceptible to the reniform nematode, *Rotylenchulus reniformis* Linford & Oliveira, 1940. 'L96-117' and 'Beauregard' were both resistant to the development of internal cork, a disease presumably caused by a virus (unknown). 'L96-117' and 'Beauregard' exhibited similar resistance to [Fusarium] fusarium root rot caused by *Fusarium solani* (Mart.) Sacc. Emend. Snyd. & Hans. 'L96-117' exhibited higher resistance to bacterial root rot, caused by *Erwinia chrysanthemi* Burkholder, McFadden and Dimock, 1953, than did 'Beauregard'. 'L96-117' exhibited lower resistance to *Rhizopus stolonifer* (Her. ex. Fr.) Lind., than did 'Beauregard'.

Circular spot, caused by *Sclerotium rolfsii* Sacc., varied from a low to a high incidence in both 'L96-117' and 'Beauregard'.

[0022] No formal trials have been conducted to date on 'L96-117' for insect pests. 'L96-117' does not appear to show any novel insect resistance. Both 'L96-117' and 'Beauregard' show similar levels of susceptibility to important [insects] insect pests, most notably the banded cucumber beetle, *Diabrotica balteata* LeConte, and white grub, *Phyllophaga ephilida* Say.

[0023] To determine yield production, complete-block trials using four replications of 'L96-117' and 'Beauregard' each were conducted at two different Louisiana Agricultural Experiment Station locations, Burden Research Plantation in Baton Rouge, Louisiana and the Sweetpotato Research Station in Chase, Louisiana. Both 'L96-117' and 'Beauregard' were transplanted in randomized complete-block trials at 31, 36, and 41 cm spacings, in Loring silt loam soil at the Burden Research Plantation and Gilbert silt loam soil at the Sweetpotato Research Station. Each block/plot was fertilized with 250 pounds per acre of nitrogen, P₂O₅, and K₂O (about 250 pounds per acre of 13% N, 13% P₂O₅, and 13% K₂O, 13-13-13 mixed fertilizer). 'L96-117' was compared to 'Beauregard' at early and middle transplanting dates at each location beginning in June. Average yields were measured for the following grades of roots: U.S. #1 (51-89 mm in diameter, 76-229 mm long); Canner (25-51 mm in diameter, 51-178 mm long); and Jumbo (larger than U.S. #1 in diameter, length or both, and without objectionable defects). A typical marketable root of 'L96-117' has a length of 130-140 mm, a diameter of 60-70 mm, and a shape that is mostly round-elliptic. The base or distal end of 'L96-117' tends to be more elongated, while the apex or proximal end is slightly rounder. U.S. #1 roots weigh between 200 to 240 g. In comparison, U.S. #1 roots of 'Beauregard' weigh between 250-300 g, are less elongate at 17 cm in length in comparison to 'L96-117' at 20 cm in length. Root widths for both are, 5-7 cm. The cortex of 'L96-117' is 0.4 cm versus 0.5 cm for 'Beauregard'.

[0024] Early transplanting date trials were conducted at the Burden Research Plantation. 'L96-117' and 'Beauregard' were transplanted on June 13 and harvested on October 11 (120 days after planting). Producers usually consider 110 to 125 days a typical development period between planting and harvesting. (Variability occurs due to weather conditions.) Average yields, measured as Mg·ha⁻¹, are shown in Table 2.

Table 2.

Selection (spacing, in cm)	US#1 [†]	Canners [†]	Jumbos [†]	TMY ^{‡‡}
'L96-117' (41)	22.8a ^[†]	5.5b	1.2bc	29.5ab
'L96-117' (36)	22.8a	5.7ab	2.8abc	31.3a
'L96-117' (31)	21.9a	5.8ab	2.6bc	30.2ab
'Beauregard' (41)	22.4a	5.3b	4.0ab	31.7a
'Beauregard' (36)	22.8a	6.4ab	5.6a	34.8a
'Beauregard' (31)	25.1a	6.8ab	4.2ab	36.0a
Least Significant Difference LSD (P<0.05)	5.6	2.1	3.0	6.3

[†]Average yields of varieties followed by a common letter do not differ significantly (P<0.05) according to Duncan's Multiple Range Test.

TMY^{‡‡} = total marketable yield

[0025] Middle transplanting date trials were also conducted at the Burden Research Plantation. 'L96-117' and 'Beauregard' were transplanted on June 22 and harvested on October 27 (127 days after planting). Average yields ($Mg \cdot ha^{-1}$) of 'L96-117' and 'Beauregard' are shown in Table 3.

Table 3.

Selection (Spacing, in cm)	US#1 [†]	Canners [†]	Jumbos [†]	TMY ^{‡¶}
'L96-117' (41)	13.4a ^[†]	3.4b	1.7a	18.5ab
'L96-117' (36)	11.4a	5.8ab	3.2a	20.3ab
'L96-117' (31)	10.5a	7.3ab	2.7a	20.6ab
'Beauregard' (41)	7.6a	4.7ab	4.6a	16.9b
'Beauregard' (36)	14.2a	3.3b	4.1a	21.6ab
'Beauregard' (31)	17.1a	13.4a	7.9a	38.5a
Least Significant Difference LSD (P<0.05)	7.5	7.0	6.1	15.5

[†] Average yields of varieties followed by a common letter do not differ significantly (P<0.05) according to Duncan's Multiple Range Test.

TMY^{‡¶} = total marketable yield

[0026] Early transplanting date trials were also conducted at the Sweet Potato Research Station. 'L96-117' was transplanted on June 1 and harvested on September 27 (118 days after planting). ('Beauregard' was not included in this transplanting trial.) Average yields ($Mg\cdot ha^{-1}$) by grade are shown in Table 4.

Table 4.

Selection (Spacing, in cm)	US#1	Canners	Jumbos	TMY ^{‡¶}
'L96-117' (21)	30.3	11.5	4.4	41.9
'L96-117' (36)	25.6	11.4	1.0	37.1
'L96-117' (41)	25.2	10.7	0.8	36.0
Least Significant Difference LSD (P<0.05)	7.8	4.1	5.4	7.5

TMY^{‡¶} = total marketable yield

[0027] Middle transplanting date trials were also conducted at the Sweet Potato Research Station. 'L96-117' and 'Beauregard' were transplanted on July 12, and harvested on October 31

(111 days after planting) using 31, 36 and 41 cm spacing. Average yields ($Mg\cdot ha^{-1}$) by grade are shown in Table 5.

Table 5.

Selection (Spacing, in cm)	US#1 [†]	Canners [†]	Jumbos [†]	TMY ^{‡‡}
'L96-117' (41)	4.5c	9.1b	1.0a	13.6c
'L96-117' (36)	5.4bc	11.7ab	0.9a	17.1bc
'L96-117' (31)	4.6c	11.7ab	2.4a	16.2c
'Beauregard' (41)	10.1a	12.1ab	0.6a	22.1a
'Beauregard' (36)	9.2ab	11.5ab	1.6a	20.9ab
'Beauregard' (31)	9.2ab ^[†]	13.8a	0.6a	23.1a
Least Significant Difference LSD (P<0.05)	4.2	4.8	3.2	4.3

[†]Average yields of varieties followed by a common letter do not differ significantly (P<0.05) according to Duncan's Multiple Range Test.

TMY^[‡] = total marketable yield

[0028] As shown in Tables 2-5, 'L96-117' produced yields comparable to 'Beauregard' at early transplanting dates (95% of 'Beauregard' for U.S. #1 grade; 91% of 'Beauregard' for total marketable yield). Spacing had no significant effect on yield. (At later planting dates, 'L96-117' had yields slightly less than those of 'Beauregard', but still competitive. Replicated plots on sweet potato production farms have not shown any predisposition of 'L96-117' to low yield characteristics in late plantings.)

[0029] 'L96-117' was also compared to 'Beauregard' for physiological attributes. Using replicates of seven month stored sweet potato roots, it was determined that 'L96-117' has an Alcohol Insoluble Solid (AIS) content (i.e., starch) of 14.5 % (fresh wt. basis). By comparison, 'Beauregard' has an AIS content of 11.4 %. (AIS content of freshly harvested roots for 'L96-117' (25.2 %) was similar to that of 'Beauregard' (23.2 %)). 'L96-117' had higher total sugars (6.7 %, 10 g fresh wt. basis) as compared to that of 'Beauregard' (5.2%) for seven month stored sweet potato roots. Puree-processed, freshly harvested roots of 'L96-117' had higher total sugar content (84 mg/gm fresh wt. basis) than did a comparable sample of 'Beauregard' (37mg/gm fresh wt. basis).

[0030] 'L96-117' produces plants (sprouts) at an earliness and quantity similar to 'Beauregard'. Days to harvest (about 110-120 days) are similar to, and sometimes greater than, 'Beauregard'. The roots of 'L96-117' are more elongated than those of 'Beauregard'. Yield of total and number one grade roots is slightly less than that of 'Beauregard'. [L96-117's] A primary [expected] use of 'L96-117' is as a processor variety. Root length of 'L96-117' makes it less desirable for the fresh sweet potato market. However, [L96-117's] the high sugar content and intense orange flesh of 'L96-117' make it well suited for production of a superior puree for uses such as baby food puree.

We claim:

- 1 1. A [sweetpotato plant substantially] new and distinct variety of *Ipomoea batatas*
- 2 plant named 'L96-117', as described and illustrated in the specification herein.

ABSTRACT OF THE [INVENTION] DISCLOSURE

A new variety of sweetpotato identified as ["L96-117 sweetpotato"] 'L96-117' is disclosed having superior processing qualities and a high total-sugar content. 'L96-117' is characterized by an intense orange flesh and an elongated root.